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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/104,788    06/25/98    MEYERS

J    97-ST37

010395  
SMITH INTERNATIONAL INC.  
16740 HARDY  
HOUSTON TX 77032

PM82/1022

EXAMINER

DANG, H

ART UNIT

PAPER NUMBER

3672  
DATE MAILED:

10/22/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/104,788

Applicant(s)

MEYERS ET AL.

Examiner

Hoang Dang

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 13 August 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Continued Prosecution Application***

1. The request filed on August 13, 2001 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/104,788 is acceptable and a CPA has been established. An action on the CPA follows.

**DETAILED ACTION**

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 70, 72 and 73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of “wherein the first base plane of a said first cavity does not intersect the second base plane of an adjacent second cavity” in the last two lines of claims 70, 72 and 73 is inaccurate. The two first and second base planes 62 of the first and second cavities shown in Figure 8 clearly intersect.

***Claim Rejections - 35 USC § 103***

5. Claims 1-18, 20, 22-42, 44, 46-63, 64, 66, 68 and 69-73 (as near as claims 70, 72 and 73 can be understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmberg (US 5,794,728) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Palmberg discloses the invention as claimed except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Palmberg's with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-35 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" 21 of Palmberg is larger than the diameter of the first exposed portions of the "first insert" 23 of Palmberg, the "ratio of the thickness to the radius of curvature of the second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

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6. Claims 1-18, 20-42, 44-64 and 66-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skidmore (US 3,955,635) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Skidmore discloses the invention as claimed except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Skidmore with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-35 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" (outer ones) of Skidmore is larger than the diameter of the first exposed portions of the "first insert" (inner ones) of Skidmore, the "ratio of the thickness to the radius of curvature of the second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

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7. Claims 1-19, 21, 23-43, 45, 47-49, 50-65, 67 and 69-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isakov (US 4,716,976) in view of Keshavan et al (US 5,370,195) or Hedlund (US 5,575,342).

Isakov discloses the invention as claimed (see figures 1-14; column 4, line 37 through column 5, line 24) except that the exposed portions of the inserts are not enhanced with a superhard material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exposed portions of the inserts of Isakov's with a layer of superhard material as claimed because it is well known in the well drilling art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to their wear resistance as evidenced by either Keshavan et al (see column 2, lines 35-49 and column 3, lines 3-7) or Hedlund et al (see column 2, lines 58-64 and column 3, lines 28-39).

As for claims 7-11, 51-35 and 54-58, it would have been obvious to use the dimension or value within the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 69 and 71, since the diameter of the second exposed portions of the "second insert" (outer ones) of Isakov is larger than the diameter of the first exposed portions of the "first insert" (inner ones) of Isakov, the "ratio of the thickness to the radius of curvature of the second exposed portions is less than the ratio of the thickness to the radius of curvature of the first exposed portions" as recited.

***Response to Arguments***

8. Applicant's arguments filed August 13, 2001 have been fully considered but they are not persuasive.

Contrary to applicant's argument, the contact areas of the second inserts in all of the primary references are larger than the contact areas of the first inserts as recited. For instance, in the Palmberg reference, the contact area of "second insert" 21 is larger than the contact area of "first insert" 23. Similarly, the contact areas of "second inserts" (the outer ones) in Skidmore and Isakov are larger than the contact areas of "first inserts" (the inner ones) (see Figures 1-7 in Skidmore and Figures 6, 7 and 9 in Isakov).

Contrary to applicant's argument, it is well known in the art to provide inserts of a percussion drill bit with a layer of polycrystalline diamond to enhance their wear resistance thereby increasing their service life. One of ordinary skill in the art, motivated by this advantage, would have provided the inserts of the Palmberg, Skidmore or Isakov drill bit with a layer of polycrystalline diamond as claimed.

Again, with respect to the claimed ranges recited in some of the dependent claims, it is well established by case law that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

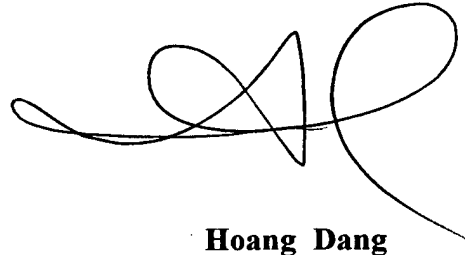
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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Dang whose telephone number is 703-308-2149. The examiner can normally be reached on 9:15-5:45 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bagnell can be reached on 703-308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3597 for regular communications and 703-305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the left.

**Hoang Dang  
Primary Examiner  
Art Unit 3672**

93104788.CPA  
October 20, 2001